TOKINARC®
TOKIN CORPORATION

Instruction Manual

CO_2 MAG Welding Torches

Semi-Automatic Torches

CSH Series

350amp.

CSH-35
CSH-35K
CSH-35F
CSH-35L
CSH-35G

450amp.

CSH-45
CSH-45F
CSH-45L

500amp.

CSH-50
CSH-50F
CSH-50L

CSHA Series

All aluminum type

350amp.

CSHA-35

400amp.

CSHA-40

500amp.

CSHA-50

Please read this instruction manual before using the product.	Please be sure to deliver this instruction manual to the end user of this product.

TOKIN CORPORATION

Contents

NOTES REGARDING SAFETY

Be sure to read these instructions before using the welding torch.

- In order to ensure safe operation, this equipment should only be set up, inspected and maintained by a qualified person, or by someone who has a through understanding of the welding equipment and who has received sufficient training in its use.
- In order to ensure safe operation, this equipment should only be operated by people who have read these instructions throughly and understood their contents and who have the knowledge and ability to handle the equipment safely.
- It is recommended that instruction in all aspects of safe operation should be obtained from institutions snd associations which provide courses in proper welding techniques taught by qualified welding instructors.
- After reread these instructions, keep them in a safe and easily-accessible place so that they can be reread at a later date as required.
- Please contact TOKIN CORPORATION or its dealer if there are any unclear points in this manual. If there are any questions regarding service, contact the dealer of your purchase or TOKIN CORPORATION. The contact address and the telephone number are printed on the rear cover of this instructions.

1.Precautions for safety

- Different degrees of personal injury or equipment damage can occur if this welding torch is used incorrectly. The terms and symbols which appear in the "NOTES REGARDING SAFETY" section of these instructions are classified into three ranks according to the possible degree of danger or injury that each one warns against.

Symbol	Term	Definition
⚠	DANGER	The instructions which follow this term represent situations where failure to follow the instructions will almost certainly result in severe injury or death.
	WARNING	The instructions which follow this term represent situations where failure to follow the instructions can possibly result in severe injury or death.
	CAUTION	The instructions which follow this term represent situations where failure to follow the instructions may result in injury to the operator or physical damage.

In the above definitions, "severe injury" refers to cases of blindness, physical wounds, burns (high- and medium-temperature), electric shocks, fractures or poisoning which may leave scars or lasting ill-effects and for which medical treatment or prolonged hospitalization may be necessary. "Injury refers to cases of physical wounds, burns and electric shocks for which prolonged medical treatment and hospitalization are not necessary, and "physical damage" refers to extensive damage that may result in damaged property or broken equipment.

2.Items that must always be observed for safety

WARNING ⚠ **These items should be observed at all times in order to prevent the possibility of serious personal injury.**

- Welding torches have been designed and manufactured with full consideration given to safety; however, the warning and cautions given in this "Notes Regarding Safety" section must always be strictly observed during use. If they are not observed, severe injury or death through misoperation may result.
- Do not unauthorized personal come into the area where welding equipment is being used.
- When welding equipment is turned ON, it generates a magnetic field. This magnetic field may adversely affect the operation of some sensors and gauges. For the same reason, people who are using a heartbeat pace maker must not go close to operating welding equipment or go into workshops where welding equipment is being used unless prior medical approval has been obtained.
- In order to ensure safe operation, welding torch, wire feeder and the welding power supply equipment should only be set up, inspected, maintained and repaired by a qualified person, or by someone who has a through understanding of welding equipment and who has received sufficient training in its use.
- In order to ensure safe operation, welding torch should only be operated by people who have read these instructions and the instructions for the wire feeder and power supply equipment through and understood their contents and who have the knowledge and ability to handle the equipment safely.
- Do not use welding torch for any applications other than for arc welding as explained in these instructions and in the instructions for the wire feeder and power supply equipment.

WARNING ⚠ ↯ **These items should be observed at all times in order to prevent the possibility of electric shocks.**

*Touching the charged parts can cause fatal electric shocks or burns. Welding wire, contact tip and tip body are charged whenever the welding torch is turned ON and operating.

- Never Torch charged parts such as welding wire, or contact tip while welding torch is turned ON and operating.
- Grounding of welding power supply case and base metal and tools which are connected electrically to the base metal, must be carried out by a qualified electrician in accordance with the proper electrical engineering regulations.
- Turn OFF all input power supplies by turning OFF the switches in the distribution box before carrying out any inspections or maintenance.
- Inspections and maintenance should be carried out at periodic intervals, and the equipment must not be used until any damaged parts found have been repaired or replaced.
- Do not use cables that are damaged or that have exposed conductors, or that are rated lower than the specified level.
- Make sure that the cable is connected securely and that it is insulated.
- Welding cable should be connected as close as possible to the base metal being welded and it should be connected securely.
- Do not wear gloves which are torn or wet.
- Use a safety strap if welding in raised places.
- Turn OFF all power switches and the input power supply when not using.

CAUTION ⚠  **Wear protective equipment at all times to protect yourself and others against arc beam, welding flashes, flying spatter and slag, and noise.**

*Welding flashes contain harmful ultraviolet and infrared lights which can cause inflammation or burn to eyes.
*Flying spatter and slag can hurt the eyes and cause serious burns.
*The noise generated by welding can cause problems with hearing.

- Always wear protective goggles or welding masks which have sufficient shielding properties when doing welding or when observing welding being done.
- Wear protective glasses to protect the eyes from spatter and slag.
- Hang a curtain around the area where welding is being carried out to prevent welding flashes from affecting passers-by.
- Wear protective clothing such as leather gloves, longsleeves, leg covers and a leather apron for protection while welding.
- Wear noise proof ear protectors if the noise level is too high.

CAUTION ⚠  **Use protective equipment at all times to protect yourself and others against any fumes and gases that may be generated from welding.**

*Fumes and gases are generated when welding is carried out. Inhaling fumes and gases can be dangerous to your health.
*Welding in confined spaces can reduce the oxygen content in the air, which can result in suffocation.

- To provent gas poisoning and suffocation, always use a proper ventilation equipment to vent gases locally or entirely as stipulated by labor safety regulations and air contamination prevention regulations, or use an adequate breathing apparatus.
- When welding in a confined space, make sure that the air is circulating freely, wear some kind of breathing apparatus, and work only under the supervision of a properly trained supervisor.
- Toxic gases may be generated if welding is carried out near where degreasing, cleaning or demisting operations are also being carried out. Avoid welding near places where such operations are being carried out.
- Welding metal which has been plated with zinc will cause toxic fumes. Remove the plating before welding, or wear adequate absorption equipment for protection.

CAUTION ⚠  **Be sure to observe the following to avoid burns from the nozzle and tip or injury from fine wire ends.**

*The nozzle or contact tip becomes very hot after use, and it can cause serious burns if touched.

- Do not touch the nozzle or tip immediately after welding has been completed.
- Do not bring the tip of the welding torch close to your face during wire inching.

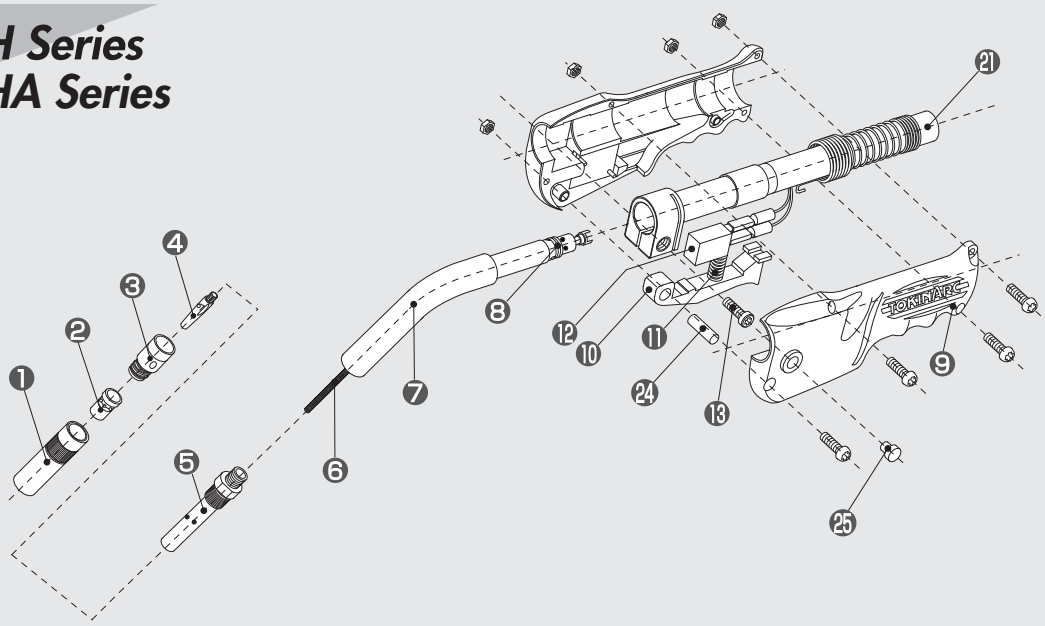
CAUTION ⚠  **Be sure to observe the following to avoid fires, explosions and rupturing.**

*Fires can be caused by spatter and base metals which are hot after welding.
*Fire can occur as a result of heat generated by the flow of current if the cable has not been correctly connected or there is an incomplete contact in the current path at the base metal being used.
*Explosions can occur if an arc is generated near containers that contain flammable substances such as gasoline.
*Ruptures can occur if welding sealed objects such as tanks and pipes.

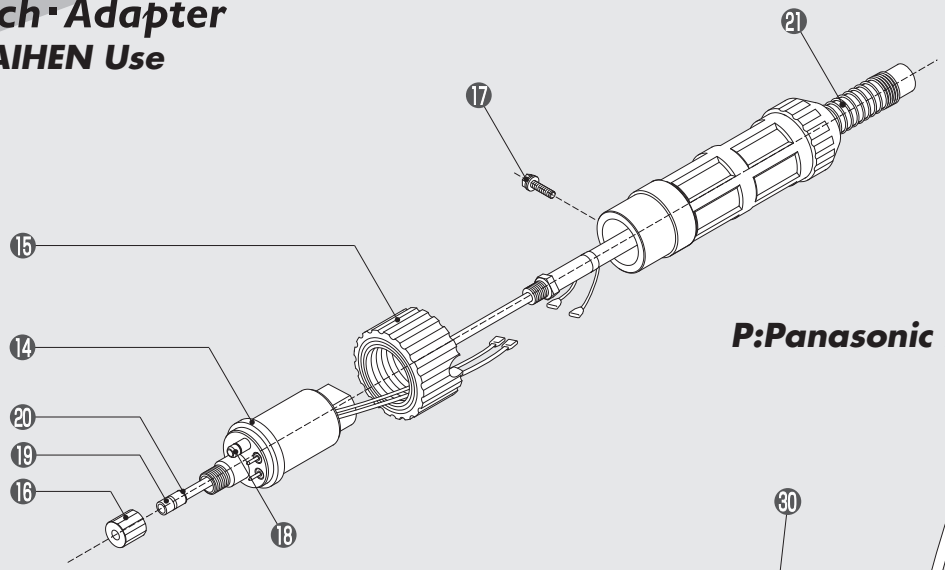
- Do not use the welding torch in places where flying spatter can cause flammable materials to ignite.
- Do not use the welding torch near places where flammable gases are present.
- Keep base metals away from flammable materials immediately after welding as they may have become hot.
- Remove any flammable materials on the other side of ceilings, floors and walls that are being welded as sparks from welding could cause such materials to ignite.
- The welding cable should be connected as close as possible to the base metal being welded, and it should be connected securely.
- Do not weld gas cylinders which still contain gas.
- Do not weld sealed tanks or pipes.
- Keep a fire extinguisher close by the place where welding is being carried out in case a fire starts.

■ Parts List

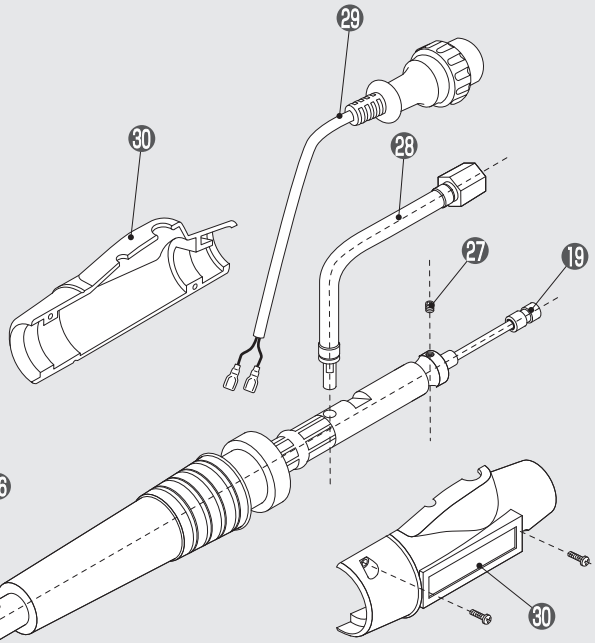
CSH Series
CSHA Series



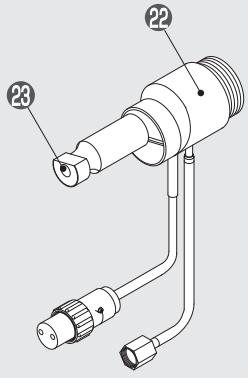
Torch・Adapter
D:DAIHEN Use



P:Panasonic Direct Use

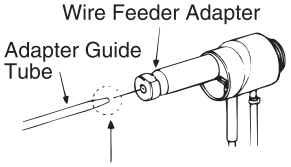


Adapter
D:DAIHEN Use



■**Replace the guide tube**

1.Push by screwdriver head and pull out old guide tube.



2.Insert new adapter guide tube from the sharpened tip.

■ Parts List

❶ Nozzle

Part No.	Size・Applicable Torch Model
001 002	N Nozzle (ID 16, 350A, L=73mm)
001 003	N Nozzle (ID 12, 350A, L=73mm)
001 008	N Nozzle (ID 18, 350A, L=73mm)
001 009	N Thick Nozzle (ID 16, 350A, L=73mm)
001 004	N Small Dia Long Nozzle (ID 10, 350A, L=100mm) *
001 007	N Arc Spot Nozzle (ID 20, 350A, L=88mm)
001 001	N Nozzle (ID 19, 500A, L=88mm)
001 010	N Nozzle (ID 16, 500A, L=88mm)
001 005	N Nozzle (ID 13, 500A, L=88mm)
001 012	N Nozzle (ID 19, 500A, L=84mm)
001 015	N Nozzle (ID 16, 500A, L=84mm)
01617A	AL N Nozzle 16mm ★

＊Use the nozzle in conbination with a long tip.

❷ Orifice

Part No.	Size・Applicable Torch Model
003 002	N Orifice S (350A)
003 001	N Orifice L (500A)

❸ Insulator

Part No.	Size・Applicable Torch Model
004 002	N Insulator S (350A)
004 001	N Insulator L (500A)
01648A	AL N Insulator S ★
01649A	AL N Insulator L ★

❹ Contact Tip

Part No.	Size・Applicable Torch Model
002 016	N Contact Tip 0.6mm
002 005	N Contact Tip 0.8mm
002 001	N Contact Tip 0.9mm
002 002	N Contact Tip 1.0mm
002 003	N Contact Tip 1.2mm
002 017	N Contact Tip 1.4mm
002 004	N Contact Tip 1.6mm
002 018	N Aluminum Contact Tip 1.2mm
002 019	N Aluminum Contact Tip 1.6mm
002 013	N Flux Cored Contact Tip 1.2mm
002 011	N Small Dia Long Contact Tip 0.6mm
002 006	N Small Dia Long Contact Tip 0.8mm
002 007	N Small Dia Long Contact Tip 0.9mm
002 008	N Small Dia Long Contact Tip 1.0mm
002 009	N Small Dia Long Contact Tip 1.2mm
002 507	N MAG Contact Tip 1.0mm
002 503	N MAG Contact Tip 1.2mm
002 502	N MAG Contact Tip 1.4mm
002 501	N MAG Contact Tip 1.6mm

❺ Tip Body

Part No.	Size・Applicable Torch Model
036 001	CS Tip Body A
036 002	CS Tip Body B
01610A	AL Tip Body A ★
01639A	AL Tip Body B ★

❻ Inner Tube

Part No.	Size・Applicable Torch Model
036011	CSH-35K,35,45,50 Inner Tube
036350	CS-35F,45F Inner Tube
050310	CSH-50L Inner Tube

❼ Torch Body

Part No.	Size・Applicable Torch Model
036 022	CSH-35,45,50 Torch Body (w/o Tip Body)
038 004	CSH-35K Torch Body (w/oTip Body)
036 024	CSH-35F,45F,50F Torch Body (w/o Tip Body)
036 051	CSH-35G Torch Body (w/o Tip Body)
050 302	CSH-35L,45L,50L Torch Body (w/o Tip Body)
01615A	TMA-35.50 Torch Body (w/o Tip Body) ★

❽ Torch Body O-Ring

Part No.	Size・Applicable Torch Model
036 030	O-Ring S-9(CSH Torch Body / WX Inner Tube)

❾ Handle

Part No.	Size・Applicable Torch Model
072 005	CSH Handle

❿ Switch Lever

Part No.	Size・Applicable Torch Model
070 002	CSH Switch Lever

⓫ Switch Spring

Part No.	Size・Applicable Torch Model
032 016	CS/CSL/CSH/CP Spring

⓬ Micro Switch

Part No.	Size・Applicable Torch Model
032 013	CS/CSL/CSH Micro Switch (with Cover)

⓭ Hexagon Socket Head Bolt

Part No.	Size・Applicable Torch Model
036 033	CSH Bolt

⓮ Power Adapter

Part No.	Size・Applicable Torch Model
020 001	Power Feeding Adaptor

⓯ Adapter Nut

Part No.	Size・Applicable Torch Model
020 002	Adaptor Nut

⓰ Liner Nut

Part No.	Size・Applicable Torch Model
020 003	Liner Nut

⓱ Screw

Part No.	Size・Applicable Torch Model
020 004	Screw M4-L8

⓲ Adapter O-Ring

Part No.	Size・Applicable Torch Model
020 005	Adaptor O-Ring

⓳ Liner

Part No.	Size・Applicable Torch Model
037 002	Liner 3.0m CSL-20,35/CSH-35 (0.8mm-0.9mm)
037 003	Liner 3.0m CSL-20,35/CSH-35 (1.0mm-1.2mm)
037 046	Liner 4.5m CSL-35/CSH-35 (1.2mm)
037 006	Liner 6.0m CSL-35/CSH-35 (1.2mm)
037 007	Liner 3.0m CSH-35 (1.4mm)
037 047	Liner 4.5m CSH-35 (1.4mm)
037 050	Liner 6.0m CSH-35 (1.4mm)
036 044	Liner 3.0m CSH-45,50 (1.2mm-1.6mm)
036 047	Liner 4.5m CSH-45,50 (1.2mm-1.6mm)
036 041	Liner 6.0m CSH-45,50 (1.2mm-1.6mm)

⓳ Plastic Liner

Part No.	Size・Applicable Torch Model
0431030	Plastic Liner 3.0m CS (Small Diameter)
0441030	Plastic Liner 3.0m CS/CSA252/WX401・402・452・451AW

⓴ Liner O-Ring

Part No.	Size・Applicable Torch Model
036 035	Liner O-Ring S-4

㉑ Power Cable (D:DAIHEN Use)

Part No.	Size・Applicable Torch Model
074 030	P/C 3.0m CSH-35-D (Reinforcing Spring)
074 045	P/C 4.5m CSH-35-D (Reinforcing Spring)
074 060	P/C 6.0m CSH-35-D (Reinforcing Spring)
075 030	P/C 3.0m CSH-45-D (Reinforcing Spring)
075 045	P/C 4.5m CSH-45-D (Reinforcing Spring)
075 060	P/C 6.0m CSH-45-D (Reinforcing Spring)
076 030	P/C 3.0m CSH-50-D (Reinforcing Spring)
076 045	P/C 4.5m CSH-50-D (Reinforcing Spring)
076 060	P/C 6.0m CSH-50-D (Reinforcing Spring)
01688A-3000	P/C 3.0m CSHA-35-D ★
01688A-4500	P/C 4.5m CSHA-35-D ★
01688A-6000	P/C 6.0m CSHA-35-D ★
01692A-3000	P/C 3.0m CSHA-40-D, CSHA-50-D ★
01692A-4500	P/C 4.5m CSHA-40-D, CSHA-50-D ★
01692A-6000	P/C 6.0m CSHA-40-D, CSHA-50-D ★

㉒ Adapter

Part No.	Size・Applicable Torch Model
020 030	N Adaptor
020 031	D Adaptor (500A)
020 029	D Adaptor (350A)
020 033	H Adaptor
020 037	B Adaptor

㉓ Adapter Guide Tube

Part No.	Size・Applicable Torch Model
020 040	N,M,MC Guide Tube
020 041	D Guide Tube
020 043	B Guide Tube
020 044	H Guide Tube

㉔ Swich Lever Pin

Part No.	Size・Applicable Torch Model
072 008	CSH Switch Lever Pin

㉕ CSH Insulation Rubber

Part No.	Size・Applicable Torch Model
072 019	CSH Insulation Cap (9.2)

㉖ Power Cable (Panasonic Direct Use)

Part No.	Size・Applicable Torch Model
084N30	P/C 3.0m CSH-35-P
084N45	P/C 4.5m CSH-35-P
084N60	P/C 6.0m CSH-35-P
17230A-3000	P/C 3.0m CSH-45-P
17230A-4500	P/C 4.5m CSH-45-P
17230A-6000	P/C 6.0m CSH-45-P
17232A-3000	P/C 3.0m CSH-50-P
17232A-4500	P/C 4.5m CSH-50-P
17232A-6000	P/C 6.0m CSH-50-P
01689A-3000	P/C 3.0m CSHA-35-P ★
01689A-4500	P/C 4.5m CSHA-35-P ★
01689A-6000	P/C 6.0m CSHA-35-P ★
01693A-3000	P/C 3.0m CSHA-40-P, CSHA-50-P ★
01693A-4500	P/C 4.5m CSHA-40-P, CSHA-50-P ★
01693A-6000	P/C 6.0m CSHA-40-P, CSHA-50-P ★

㉗ Liner Set Screw

Part No.	Size・Applicable Torch Model
031 035	Screw M4 x 4

㉘ Gas Hose

Part No.	Size・Applicable Torch Model
032 058	CS Gas Hose N,D

㉙ Plug Cable

Part No.	Size・Applicable Torch Model
032 052	CS Plug Cable N,D

㉚ Supporter

Part No.	Size・Applicable Torch Model
033 108	Cable Support

Parts for D Adapter

Part No.	Size・Applicable Torch Model
020 050	Power Cable Adaptor 500A
020 054	Power Cable Adaptor 350A
020 052	Outlet Guide (D Adaptor)
020 053	Guide Adaptor (D Adaptor)

Arc Cover

Part No.	Size・Applicable Torch Model
072 007	CSH Arc Cover

(Note 1) *Only applicable with CSHA Series (as well as CSH Series)

(Note 2) Further consultation required regarding following wire feeder connection ;
European (Binzel)
DAIHEN Welbee/ Kobe Steel SENSARC
Panasonic TAB
DAIHEN Autowelder

Specifications

Torch Model		CSH-35 CSH-35K CSH-35F CSH-35L CSH-35G	CSH-45 CSH-45F CSH-45L	CSH-50 CSH-50F CSH-50L	CSHA-35	CSHA-40	CSHA-50
Rated Current (A)	A	350	450	500	350	400	500
Applicable Wire Size (mm)	mm ϕ	(0.9,1.0,1.4)1.2	(1.4,1.6)1.2	(1.2,1.4)1.6	(0.9,1.0,1.4)1.2	(1.4,1.6)1.2	(1.2,1.4)1.6
Cable Length (m)	m	3/4.5/6	3/4.5/6	3/4.5/6	3/4.5/6	3/4.5/6	3/4.5/6
Duty Cycle (%)	% (CO2)	60	60 (Type F:40)	60 (Type F:35)	50	50	40
	% (MAG)	35	35 (Type F:20)	35 (Type F:20)	35	35	30
Cooling Method		Air Cooled					
Working Weight	Kg	1.1	1.3	1.7	0.6	0.82	0.85
Total Weight (with 3m cable)	Kg	2.4	3.0	3.6	1.91	2.26	2.41

CSHA-35F- P -3 (•)

Torch Model

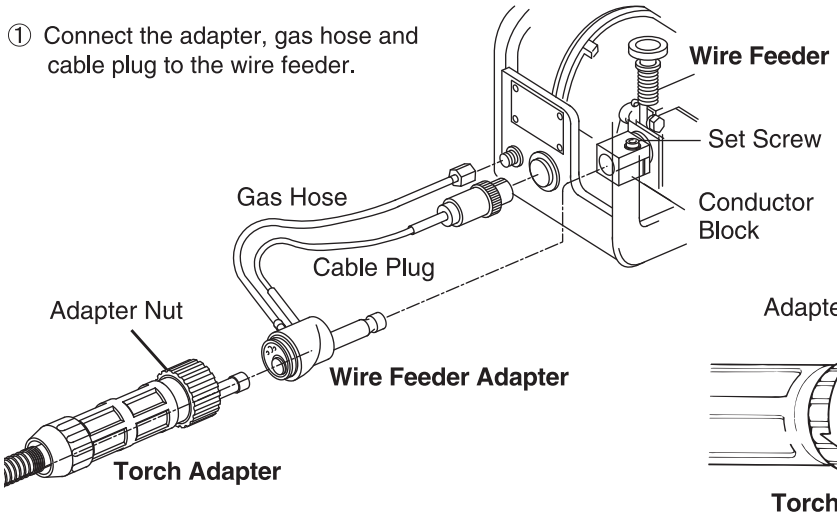
Cable Length (m)

The code used here is to specify the special type product.

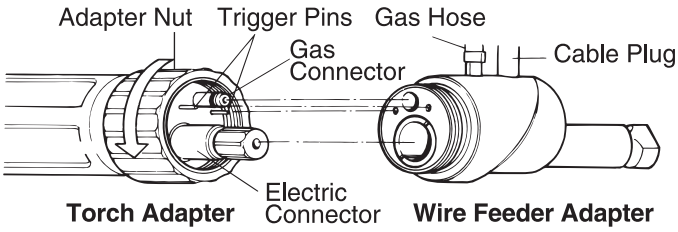
This alphabet code is used only for the direct use type of cable-end.
- **P** : Panasonic Direct Use
- **D** : DAIHEN Use
- **EURO**: European(Binzel) wire feeder connection
- **DV**: DAIHEN welbee/Kobe Steel Sensarc
- **TAB**: Panasonic TAB connection
- **AT**: DAIHEN Autowelder

Preparation for Welding (D:DAIHEN Use)

① Connect the adapter, gas hose and cable plug to the wire feeder.

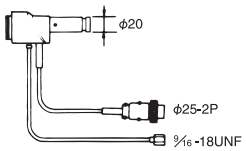
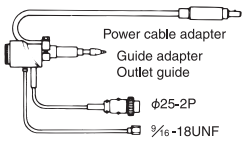


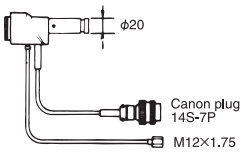
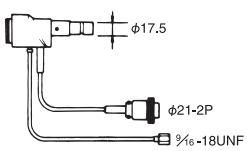
② Insert the electric connector and shielding gas connector of the torch into the holes in the adapter on the feeder side. Then firmly tighten the adapter nut.



Wire Feeder Adapter (D:DAIHEN Use)

Attach the "single operation adapter" to the wire feeder allows the torch to be connected easily.
Following different types of adapters are available for connection to wire feeders.

Adapter Type	Shape and Dimensions	Applicable Wire Feeder
N Adapter (020030)		**Panasonic** For all Air-Cooled Wire Feeder No adapter is needed when using a Uni-Con O series torch.
D Adapter **350A** (020029) **500A** (020031)		**DAIHEN** CM-231・CM-144・CML-23・CM-501 No adapter is needed when using a blue torch.

Adapter Type	Shape and Dimensions	Applicable Wire Feeder
H Adapter (020033)		**HITACHI** For all Air-Cooled Wire Feeders
B Adapter (020037)		**OSAKA DENKI** For all Air-Cooled Wire Feeders No adapter is needed when using a GR・GH series torch.

■Miller, Lincoln, Hobart and other manufactures' adapter are available on request.

Connection to the Wire Feeder

P:Panasonic Direct Use

D:DAIHEN Use

EURO European(Binzel) wire feeder connection

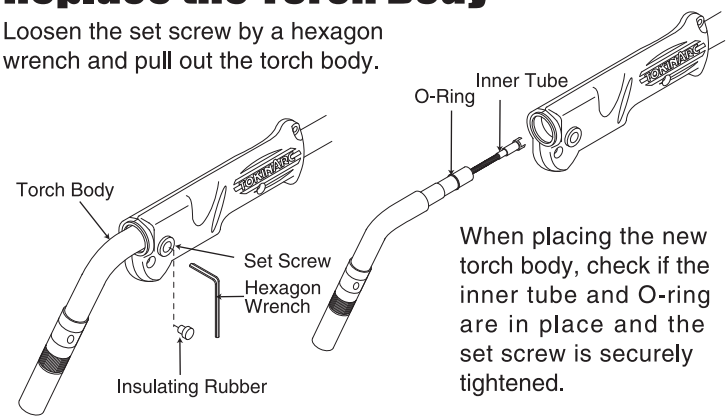
TAB Panasonic TAB connection

DV DAIHEN welbee/Kobe Steel Sensarc

AT DAIHEN Autowelder

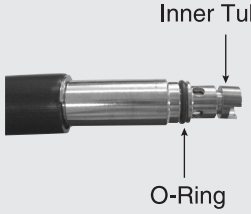
Replace the Torch Body

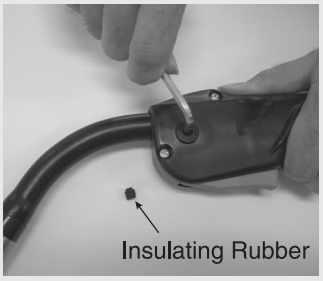
Loosen the set screw by a hexagon wrench and pull out the torch body.



When placing the new torch body, check if the inner tube and O-ring are in place and the set screw is securely tightened.

NOTICE:





Insert the torch body all the way seated in and tighten a bolt. Inadequate tightning generates heat. Deteriorated O-ring, which leads to a gasleak, must be replaced.

Replace the Inner Tube

When inside of the inner tube has been worn, remove the torch body and replace the inner tube.

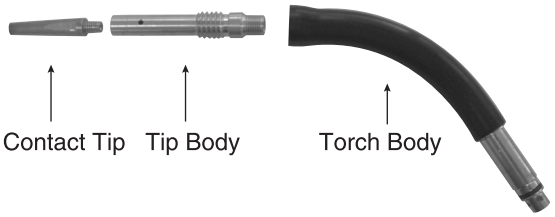
Inner tube

Part No.	Torch Model
036 011	CSH-35/45/50 CSHA-35/40/50
036 350	CSH-35F/45F/50F
050 310	CSH-35L/45L/50L

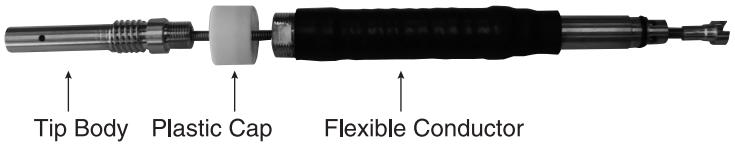
NOTICE : Adjust the length for replacing the inner tube. Cut the front end of new inner tube to adjust the length of torch body.

Replace the Tip Body

Unscrew the tip body with a wrench if damaged by heat and spatterring. Keep the tip body tightened to the torch body all the time for longer life.



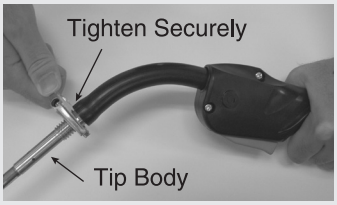
■CSH-35F,45F,50F



When replacing the tip body on flex torch, carefully unscrew the tip body with a wrench. Do not damage the flexible conductor part.

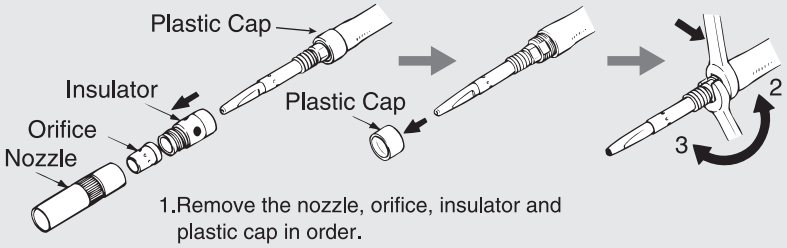
NOTICE:

Tighten securely the tip body to avoid generating excess heat and unstable arc.



Attention

Flex : Replacing the Tip Body



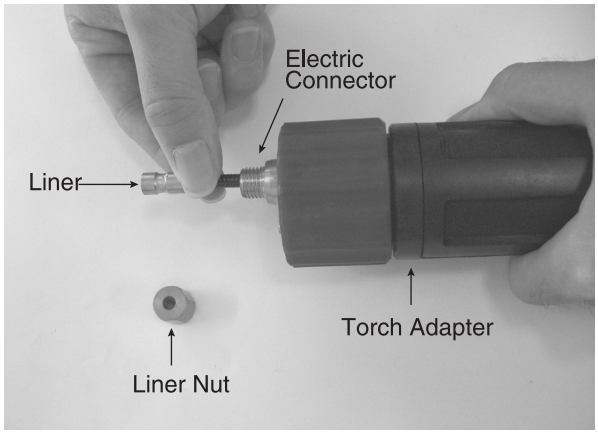
1.Remove the nozzle, orifice, insulator and plastic cap in order.

2.Hold the torch body with a wrench and remove the tip body by turning it counterclockwise with another wrench.

3.When replacing the tip body, be sure to hold the torch body with a wrench as well as removal procedure and tighten the tip body and put the plastic cap back.

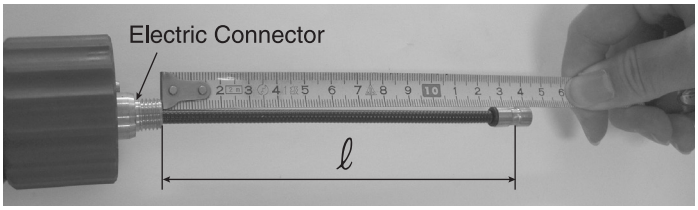
Replace the Liner

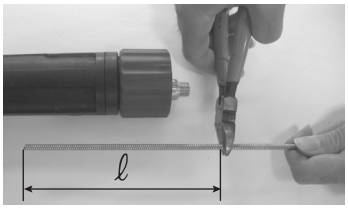
If wire feeding is no longer smooth because the inside of the liner is clogged with wire shavings or dirt and rust.

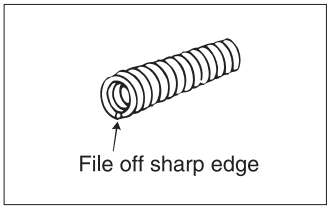


① Place the power cable in a straight line.

② Unscrew the liner nut. Rotate the torch end counter-clockwise so that the liner end comes out. Pull out the liner.







③ Insert the new liner fully into the cable. Measure the length "ℓ" which protrudes from the end. Pull the liner out and cut off the same length "ℓ" at the front. After cutting, file off sharp edge.

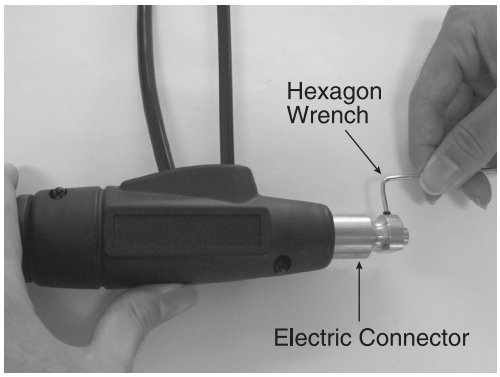
④ Insert the new liner adjusted in length into the cable. The O-ring at the end of liner prevents gas leak.

NOTICE:

Carefully insert the liner which is properly cut to avoid bending.

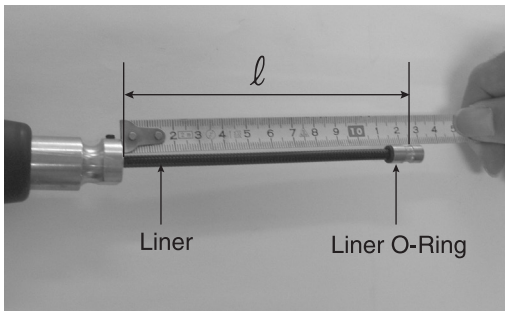
After setting the liner, screw on the liner nut by hand. Do not overtighten to prevent distortion of the liner. Tighten the liner nut by hand is adequate.

Direct Connection Type

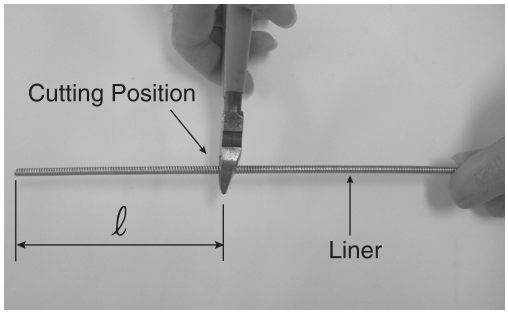


① Place the cable in a straight line.

② By a hexagon wrench, loose the socket head lock screw on the electric connector. Rotate the torch end counterclockwise so that the liner end comes out. Pull out the liner.



③ Insert the new liner fully into the cable. Measure the length "ℓ" which protrudes from the end. Pull the liner out and cut off the same length "ℓ" at the front. After cutting, file off any sharp edge.



④ Insert the new liner adjusted in length into the cable. The O-ring at the end of liner prevents gas leak. Tighten the hexagon socket head on electric connector. If the length of the liner is incorrect, this may hinder smooth wire feeding. Make sure to cut the liner in proper length.

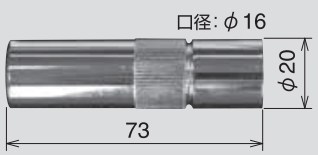
ご案内

超軽量オールアルミ半自動トーチ TLA/CSHA シリーズは、極限まで軽量化のため、
アルミ部材を多用しております。消耗部品のアルミ製ノズルは、従来の銅製ノズルに
比べ寿命が短くなります。アルミ製ノズルと銅製ノズル（別売）は互換性があります、
使用状況に合わせ使い分けをお願いいたします。

NOTICE

In order to reduce weight to the highest degree possible the ultralightweight all aluminum semi-automatic torch TLA/CSHA series uses many aluminum parts. As a consumable part aluminum nozzles have a shorter life span when compared to conventional copper nozzles. Aluminum nozzles and copper nozzles (sold separately) are compatible, so please use each properly according to the welding conditions.

アルミ製・銅製のどちらを選択いただいても互換性がありますので、そのまま取り付けることが可能です。
Whether you choose aluminum or copper, both nozzles are interchangeable and can be installed as is.

350A		01617A	AL Nノズル16㎜（アルミ製） AL N Nozzle 16 mm (Made of Aluminum)
		001002	Nノズル16㎜（銅製） N Nozzle 16 mm (Made of Copper)
200A		05735A	TLA-20 ノズル16㎜（アルミ製） TLA-20 Nozzle 16 mm (Made of Aluminum)
		038041	TL-20ストレートノズル（銅製） TLA-20 Straight Nozzle (Made of Copper)

MEMO

TC1504T05-05

CO_2 MAG Welding Torches CSH/CSHA

April,2015 Ver. 1.0 First Edition
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Aug,2022 Ver. 3.0 Third Edition
Sep,2022 Ver. 4.0
June,2023 Ver. 5.0

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